WHAT IS CLAIMED IS:

    1. A method for transferring and displaying data pages on a data network, said network being of a type on which data can be retrieved as pages, said network having at least one server on which said data pages are stored, a gateway connected to said at least one server, and a user station connected to said gateway by a data connection having a finite speed, said user station requesting one of said pages from said at least one server, said method comprising the steps of:

    sending a request from said user station to said gateway for retrieval of said data page from one of said at least one server;

    recalling a base version of said data page;

    initiating, in response to a determination that said base version is not current, a retrieval of said data page from said one of said at least one server to said gateway for transfer to said user station;

    determining, after receipt at said gateway of a response to said request, a difference between said requested data page and said base version of said page;

    transmitting said difference to said user station;

    calculating at said user station said data page as a function of said base version and said difference; [and]

    determining a measure of efficiency of said difference determining and difference transmitting step;

    when said measure of efficiency indicates that sending said requested data page in its entirety from said gateway to said user station is efficient, sending said requested data page in its entirety from said gateway to said user station, and displaying said requested data page at said user station; and

    when said measure of efficiency indicates that sending said requested data page in its entirety from said gateway to said user is inefficient,

    displaying said calculated page at said user station;

    comparing size of said difference to a minimum threshold, wherein said minimum

threshold is represented by the equations:

$T_{small} < D$ and $D_{tot} < F (S,C,T_{large})$ where D represents a total number of unsent bytes of said difference data, including said difference data that has been generated but not sent; D_{tot} represents a total number of bytes of difference data that has been generated; C represents a number of byte of said requested data page that has already been processed; S represents the size of the base version of said data page; T_{small} represents a minimum threshold; T_{large} represent a maximum threshold; and F is a function of S,C, and T_{large}.; and

if said size of said difference exceeds said minimum threshold:

aborting said recalling and transmitting steps and said step of displaying said calculated page,

sending said requested data page in its entirety from said gateway to said user station, and

displaying said requested data page at said user station .

2. The method of claim 1 wherein said gateway is said server.

3. The method of claim 1 wherein said base version of said data page is an earlier version of said data page.

4. The method of claim 1 wherein said base version of said data page share elements in common with said data page.

5. The method of claim 1 wherein said recalling step comprises:

recalling said base version of said page from storage at said gateway; and

transmitting said base version of said page from said gateway to said user station.

6. The method of claim 1 wherein said recalling step comprises:

recalling a first version of said page at said user station;

recalling a second version of said page at said gateway;

comparing said first version with said second version; and

transmitting said second version from said gateway to said user station when said second version differs from said first version.

7. The method of claim 1 wherein said step of determining a measure of efficiency comprises:

assessing, after determination of said difference, composite transmission size representing a function of size of said difference and transmission size of any remaining amount of said base version yet to be transferred;

comparing said composite transmission size to transmission size of said requested data page; and

when transmission size of said requested data page exceeds said composite transmission size, determining that sending said requested data page in its entirety from said gateway to said user station is inefficient, otherwise determining that sending said requested data page in its entirely from said gateway to said user station is efficient.

8. The method of claim 7 wherein each of said composite transmission size and said transmission size of size of said requested data page is determined based on compression prior to transmission.

9. The method of claim 1 wherein said step of determining a measure of efficiency comprises:

determining, when said requested page is received at said gateway, what proportion of said base version has been transferred to said user station; and

determining, when said proportion of said base version that has been sent is above a threshold proportion, that sending said requested data page in its entirety from said gateway to said user station is inefficient, otherwise determining that sending said requested data page in

its entirety from said gateway to said user station is efficient.

10. The method of claim 9 wherein said threshold proportion is dynamically determined.

11. The method of claim 10 wherein said threshold proportion is determined based on said finite speed.

12. The method of claim 1 wherein said step of determining a measure of efficiency comprises:

determining, when said requested page is received at said gateway, what proportion of said base version has been transferred to said user station; and

determining, when said proportion of said base version that has been set is above a threshold proportion, that sending said requested data page in its entirety from said gateway to said user station is inefficient, otherwise;

assessing, after determination of said difference, a composite transmission size representing a function of size of said difference and size of any remaining amount of said base version yet to be transferred;

comparing said composite transmission size to transmission size to said requested data page; and

when said transmission size of said requested data page exceeds said composite transmission size, determining that sending said requested data page in its entirety from said gateway to said user station is inefficient, otherwise determining that sending said requested data page in its entirety from said gateway to said user station is efficient.

13. The method of claim 12 wherein each of said composite transmission size and said transmission size of said requested data page is determined based on compression prior to transmission.

14. The method of claim 12 wherein said threshold proportion is dynamically determined.

15. The method of claim 14 wherein said threshold proportion is determined based on said finite speed.

16. The method of claim 1 wherein said threshold is dynamically determined.

17. The method of claim 16 wherein said threshold is determined based on said finite speed.

18. The method of claim 1 wherein said determining step comprises:

awaiting completion of said retrieval of said data page from said one of said at least one server; and

comparing said complete retrieved data page to said base version of said page.

19. A method for transferring and displaying data pages on a data network, said network being of a type on which data can be retrieved as pages, said network having at least one server on which said data pages are stored, a gateway connected to said at least one server, and a user station connected to said gateway by a data connection having a finite speed, said user station requesting one of said pages from said at least one server, said method comprising the steps of:

sending a request from said user station to said gateway for retrieval of said data page from one of said at least one server;

recalling a base version of said data page;

initiating, in response to a determination that said base version is not current, a retrieval of said data page from said one of said at least one server to said gateway for transfer to said user station;

determining, after receipt at said gateway of a response to said request, a difference

between said requested data page and said base version of said page, wherein said determining step further includes the steps of:

awaiting completion of retrieval of a predetermined portion of said data page from said one of said at least one server;

comparing said retrieved predetermined portion of said data page to said base version of said data page;

generating a partial difference between said data page and said base version of said data page, wherein said generating step includes the steps of :

comparing transmission size of said partial difference to a minimum threshold wherein said comparing step is represented by the equations:

$T_{small} < D$ and $D_{tot} < F (S,C,T_{large})$ where D represents a total number of unsent bytes of said difference data, including said difference data that has been generated by not sent; D_{tot} represents a total number of bytes of difference data that has been generated; C represents a number of byte of said requested data page that has already been processed; S represents the size of the base version of said data page; T_{small} represents a minimum threshold; T_{large} represent a maximum threshold; and F is a function of S,C, and T_{large};

transmitting said partial difference to said user station when said transmission size of said partial difference exceeds said minimum threshold; and

when said transmission size of said partial difference is less than said minimum threshold:

comparing at least one additional retrieved predetermined portion of said data page to a base version of said data page to generate at least one additional partial difference between said data page and said base version of said data page;

adding transmission size of said at least one additional partial difference to transmission size of said held partial difference until a sum of said transmission sizes exceeds said minimum threshold; and

transmitting said held partial difference and said at least one additional partial difference to said user station; and

repeating said awaiting and comparing step for additional predetermined

portions of said data page;

transmitting said difference to said user station;

calculating at said user station said data page as a function of said base version and said difference; and

displaying said calculated page at said user station.

20. The method of claim 19 further comprising, on generation of said partial difference:

comparing transmission size of said partial difference to a minimum threshold;

transmitting said partial difference to said user station when said transmission size of said partial difference exceeds a said minimum threshold; and

when said transmission size of said partial difference is less than said minimum threshold:

holding said partial difference,

comparing at least one additional retrieved predetermined portion of said data page to be said base version of said data page to generate at least one additional partial difference between said data page and said base version of said data page,

adding transmission size of said at least one additional partial difference to transmission size of said held partial difference until a sum of said transmission sizes exceeds said minimum threshold and

transmitting said held partial difference and said at least one additional partial difference to said user station.

21. The method of claim 20 wherein each of said transmission size of said partial difference and said transmission size of said at least one additional partial difference is determined based on compression prior to transmission,

22. The method of claim 19 further comprising:

determining a transmission size of each partial difference;

on transmission of each said partial difference to said user station, adding said transmission size of said partial difference to a cumulative transmission size of partial differences transmitted to said user station;

comparing said cumulative transmission size to a maximum threshold; and

when said cumulative transmission size exceeds said maximum threshold, aborting said determining step and replaying said data page to said user station.

23. The method of claim 22 wherein each of said transmission size of said partial difference and said transmission size of said at least one additional partial difference is determined based on compression prior to transmission.

24. The method of claim 19 further comprising:

determining a measure of efficiency of said difference determining and calculating step and said difference transmitting step; and

when said measure of efficiency indicates that sending said requested data page in its entirety from said gateway to said user station is efficient;

aborting said recalling and transmitting steps and said step of displaying said calculated page,

sending said requested data page in its entirety from said gateway to said user station, and

displaying said requested data page at said user station.

25. The method of claim 24 wherein said step of determining a measure of efficiency comprises:

assessing, after determination of said size of said partial difference, a composite transmission size representing a function of size of said partial difference and size of any remaining amount of said base version yet to be transferred;

comparing said composite transmission size to transmission size of said requested data page; and

when said transmission size of said requested data page exceeds said composite transmission size, determining that sending said requested data page in its entirety from said gateway to said user station is inefficient, otherwise determining that sending said requested data page in its entirety from said gateway to said user station is efficient.

26. The method of claim 25 wherein said assessing step comprises estimating from said size of said partial difference a total size for data representing a difference between said data page and said base version of said data page.

27. The method of claim 25 wherein each of said composite transmission size and said transmission size of said requested data page is determined based on compression prior to transmission.

28. The method of claim 9, wherein said threshold proportion of said base version that has been sent is at least 40 percent of said base version.

29. The method of claim 7, wherein said step of determining that sending said requested data page in its entirety is inefficient includes having the requested data page be at least 120 percent of the difference data.

30. The method according to claim 1 wherein said difference data will not be sent is represented by the equation:

$D < T_{small}$ and said difference data accumulated will be held until additional difference data has been calculated.

31. The method according to claim 1 wherein said difference data aborted is represented by the equation:

$$D_{tot} \geq F(S, C, T_{large}).$$